

Mechanism of Formation and Chemical Structure of Graphene Oxide

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Abstract

© 2017 John Wiley & Sons, Ltd. This chapter presents the most recent view on fundamental aspects of graphene oxide (GO) chemistry. The mechanism of GO formation, its transformation during aqueous work-up and the fine chemical structure are introduced sequentially, in a way typical of textbooks. Re-examination of GO acidity overflows into discussion of the dynamic structural model. A new type of GO material with low density of defects, and thus termed "oxo-functionalized graphene" is introduced next. The challenges brought by the two-component GO structural model are then addressed. The chapter ends with a brief review of different bulk forms of graphite oxide.

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Keywords

Chemical structure, Graphene oxide, Mechanism of formation, Origin of acidity